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# ABBREVIATIONS

ALD	ANALOG LOOP DRIVER
ATC	ADDRESSABLE TERMINAL CABINET
CKT	CIRCUIT
cd	CANDELLA
DWG	DRAWING
EL	ELECTRIC
ELEV	ELEVATOR
EXIST.	EXISTING
F.A.	FIRE ALARM
FL	FLOOR
GND	GROUND
GSC	GALVANIZED STEEL CONDUIT
MTD	MOUNTED
N.T.S.	NOT TO SCALE
O.A.E.	OR APPROVED EQUAL
PS	PULL STATION
SPK	SPEAKER
STR	STROBE
TL	TELEPHONE
TSC	TERMINAL STRIP CABINET
U.O.N.	UNLESS OTHERWISE NOTED
W	WATT
WTC	WORLD TRADE CENTER

# LEGEND

	HEAVY LINE INDICATES WORK TO BE DONE
	LIGHT LINE INDICATES EXISTING TO REMAIN
	LIGHT DASHED LINE INDICATES DEVICE AND/OR CIRCUITRY TO BE REMOVED
	FIRE ALARM CABLE - SEE GENERAL NOTE 1.
	FIRE ALARM CABLE IN 3/4" GALVANIZED STEEL CONDUIT.
	CABLE ENTERING LENGTH OF 3/4" GALVANIZED STEEL CONDUIT. END OF CONDUIT TO HAVE BUSHING.
	NUMBER OF CABLES
	TYPE OF CABLE:
	A - 2#14 AWG 200°C, SHIELDED TWISTED PAIR TEFLON CABLE, CLASS E, AND BSA APPROVED N.Y.C. FOR LOCAL LAW #5.
	B - 2#14 AWG 200°C, UNSHIELDED TWISTED PAIR TEFLON CABLE, CLASS E, AND BSA APPROVED N.Y.C. FOR LOCAL LAW #5.
	RECESSED CEILING MOUNTED ROUND SPEAKER, WHEELLOCK MODEL #E-90-W WITHOUT SUBSTITUTION. TAP SETTING AS INDICATED.
	WALL MOUNTED SQUARE SPEAKER, WHEELLOCK MODEL #E-70-R WITH SBB BACKBOX WITHOUT SUBSTITUTION. TAP SETTING AS INDICATED.
	FLUSH MOUNTED STROBE, THE NUMERAL INDICATES STROBE CANDELLA RATING, TYPE AND MODEL # AS FOLLOWS:
15cd	- 15 CANDELLA STROBE, WHEELLOCK MODEL #RS-2415-VFR WITHOUT SUBSTITUTIONS.
30cd	- 30 CANDELLA STROBE, WHEELLOCK MODEL #RS-2430-VFR WITHOUT SUBSTITUTIONS.
75cd	- 75 CANDELLA STROBE, WHEELLOCK MODEL #RS-2475-VFR WITHOUT SUBSTITUTIONS.
110cd	- 110 CANDELLA STROBE, WHEELLOCK MODEL #RS-24110-HFR WITHOUT SUBSTITUTIONS.
	SURFACE MOUNTED COMBINATION STROBE/SPEAKER UNIT, LISTED WITH RESPECTIVE CANDELLA RATED STROBE, AND INSTALLED USING BACK BOX WHEELLOCK MODEL #SBB, WITHOUT SUBSTITUTIONS. THE NUMERALS, WITH SUFFIX "W" INDICATES SPEAKER TAP SETTING AND SUFFIX "cd" INDICATES STROBE CANDELLA RATING AS FOLLOWS:
15cd	- 15 CANDELLA STROBE WITH SPEAKER, WHEELLOCK MODEL #E-70-LS-24-VFR WITHOUT SUBSTITUTIONS.
30cd	- 30 CANDELLA STROBE WITH SPEAKER, WHEELLOCK MODEL #E-70-MS-24-VFR WITHOUT SUBSTITUTIONS.
75cd	- 75 CANDELLA STROBE WITH SPEAKER, WHEELLOCK MODEL #E-70-IS-24-VFR WITHOUT SUBSTITUTIONS.
110cd	- 110 CANDELLA STROBE WITH SPEAKER, WHEELLOCK MODEL #E-70-24110-HFR WITHOUT SUBSTITUTIONS.
	ALD LOOP DEVICE ADDRESS; FIRST THREE DIGITS REPRESENT NETWORK/LOOP ADDRESS (AS DIRECTED BY ENGINEER), AND LAST THREE DIGITS REPRESENT DEVICE ADDRESS.
	ADDRESSABLE OPEN AREA SMOKE DETECTOR FURNISHED AND INSTALLED BY CONTRACTOR. -XXX- REPRESENTS THREE DIGIT DEVICE ADDRESS ONLY. CONTRACTOR SHALL TAG DETECTOR HEAD AND BASE WITH COMPLETE SIX DIGIT DEVICE ADDRESS (INCLUDING NETWORK, LOOP AND DEVICE NUMBER) AS SHOWN ABOVE. THE SINGLE DIGIT NUMERAL INDICATES DETECTOR TYPE, MODEL # AND INSTALLATION DETAIL AS FOLLOWS:
1	- PLENUM MOUNTED (IN FRONT OF RETURN AIR GRILL) PYROTRONICS MODEL #ILI-1A WITH BASE #DB-3S (HIGH VELOCITY), PART #500-093023 WITHOUT SUBSTITUTIONS. FOR INSTALLATION, SEE DETAIL 'F' ON DRAWING E-17.
2	- SUSPENDED CEILING/DRY WALL MOUNTED PYROTRONICS MODEL #ILI-1 WITH BASE #DB-3S, PART #500-092725 WITHOUT SUBSTITUTIONS. FOR INSTALLATION, SEE DETAIL 'E' ON DRAWING E-17.
2	- SURFACE MOUNTED (FOR OPEN CEILING AREA ONLY) PYROTRONICS MODEL #ILI-1 WITH BASE #DB-3S, PART #500-092725 WITHOUT SUBSTITUTIONS. FOR INSTALLATION, SEE DETAIL 'J' ON DRAWING E-17.
	E.O.L. END OF LINE (1/2 WATT 24kΩ) RESISTOR. FURNISHED AND INSTALLED BY CONTRACTOR.
	REMOVAL DETAIL NUMBER. SEE DWG A-1
	EXISTING SMOKE DETECTOR IN SUSPENDED CEILING TO BE REMOVED AND CEILING PATCHED. REMOVAL DETAIL AS INDICATED.
	EXISTING FIRE ALARM SPEAKER IN SUSPENDED CEILING TO BE REMOVED AND CEILING PATCHED. REMOVAL DETAIL AS INDICATED
	EXISTING TENANT AMPLIFIER
	EXISTING 12"x12"x6" ADDRESSABLE TERMINAL CABINET
	EXISTING TERMINAL STRIP CABINET

# GENERAL NOTES

- ALL FIRE ALARM CABLES SHALL BE TYPE FPLP-UL TWISTED PAIR #14 GAUGE SOLID COPPER, 200°C, 600V, SHIELDED (EXCEPT FOR SPEAKERS WHICH USE UNSHIELDED), INSULATED CONDUCTORS, CLASS "E", BSA AND MEA APPROVED FOR NYC LOCAL LAW #5 WITH FEP (TEFLON OR APPROVED EQUAL) INSULATION, AND CONDUCTORS COLORED BLACK & RED. ALL FIRE ALARM CABLES WILL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. ALL CABLES INSTALLED IN HUNG CEILING SHALL BE MOUNTED AND SUPPORTED ABOVE THE HUNG CEILING AND INSTALLED WITHOUT CONDUITS, UNLESS OTHERWISE NOTED. ALL OPEN AREAS AND MER'S WILL UTILIZE CONDUITS.
- PROGRAMMING OF BASE BUILDING SYSTEM FIRE ALARM PANELS WILL BE BY THE AUTHORITY. PROGRAMMING OF ALL ADDRESSABLE DEVICES (SMOKE DETECTORS) SHALL BE BY THE CONTRACTOR. FINAL CONFIRMATION OF ADDRESSES SHALL BE AS DIRECTED BY ENGINEER, PRIOR TO PROGRAMMING DEVICES.
- SET TAP SETTINGS ON ALL SPEAKERS (AS SHOWN ON DWG'S), PRIOR TO INSTALLATION.
- ALL CONDUITS SHALL BE RIGID STEEL, HOT DIPPED GALVANIZED WITH THREADED FITTINGS (U.O.N.).
- PATCH & SEAL PENETRATIONS FROM ALL CONDUITS PASSING THRU WALLS, FIRE RATED CONSTRUCTION AND PLENUMS, WITH THERMAFIBER (O.A.E.).
- ALL RACEWAYS, ENCLOSURES & BOXES SHALL BE GROUNDED IN AN APPROVED MANNER.
- ALL PENETRATIONS MADE IN EXISTING FIRE ALARM EQUIPMENT SHALL BE MADE IN THE PRESENCE OF THE ENGINEER. NO TOP PENETRATIONS SHALL BE MADE IN ANY FIRE ALARM PANELS.
- CONTRACTOR SHALL COORDINATE DEVICE PENETRATIONS WITH ENGINEER, FOR ALL NON-DRYWALL FACED WALLS.
- FOR CIRCUIT LEGEND, SEE DWG'S E-2, E-7 & E-12.
- FOR MOUNTING DETAILS AND WIRING DIAGRAMS OF SPEAKERS, STROBES AND SMOKE DETECTORS, SEE DWG E-17. NO "T" TAPPING WILL BE PERMITTED. ALL BOX COVERS, CONDULET COVERS, ETC. SHALL BE PAINTED RED.
- FINAL CONNECTIONS IN THE TSC AND ATC CABINETS WILL BE MADE BY OTHERS. SHAPING AND LABELING OF ALL CABLES AT EXISTING TSC'S AND ATC'S SHALL BE PERFORMED BY THE CONTRACTOR. THIS WORK SHALL BE DONE IN THE PRESENCE OF THE ENGINEER.
- CONTRACTOR SHALL USE BRADY LABELS #WML-205-292-1 (O.A.E.) FOR LABELING OF ALL CONDUCTORS AND #WML-305-292 (O.A.E.) FOR LABELING OF ALL CABLES. SEE DWG'S E-6, E-11 & E-16.
- UNDER THE DIRECTION OF THE ENGINEER, CONTRACTOR SHALL REMOVE EXISTING CEILING SURFACE MOUNTED SPEAKERS & SMOKE DETECTORS, ONLY AFTER DEVICES TO BE INSTALLED ARE OPERATIONAL.
- ALL EQUIPMENT SHOWN TO BE REMOVED SHALL HAVE ITS ASSOCIATED TERMINATION WIRING ABANDONED AND TAPED IN PLACE. ENDS OF ABANDONED CABLES SHALL BE TAGGED "NOT IN USE".
- PRIOR TO INSTALLATION, CONTRACTOR SHALL TEST, IN THE PRESENCE OF THE ENGINEER, ALL REELS OF FIRE ALARM CABLES FOR CONTINUITY AND SHORT CIRCUITS.
- FIRE ALARM CABLES SHALL BE TESTED IN ACCORDANCE TO THE AUTHORITY'S ENGINEERING TEST PROCEDURES. ALL TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- SMOKE DETECTORS ARE REQUIRED AT ALL RETURN AIR GRILLS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERING ANY RETURN AIR GRILL NOT SHOWN ON THE CONTRACT DRAWINGS AND SHALL FURNISH & INSTALL IN ACCORDANCE WITH "NET COST" PROVISION OF THIS CONTRACT. SEE SPECIFICATION FOR EXACT PROVISIONS.
- ALL CEILING TILES REMOVED SHOULD BE REPLACED AS SOON AS ACCESS TO THE CEILING AREA IS NO LONGER REQUIRED FOR THE INSTALLATION AND TESTING OF WIRING AND DEVICES.
- ALL FINISHES DISTURBED BY THE INSTALLATION OF DEVICES OR WIRING SHALL BE RESTORED TO MATCH EXISTING PRIOR TO START OF INSTALLATION.
- IN THE EVENT OF TENANT RELOCATION AND/OR CHANGE IN OFFICE LAYOUT, ANY ADDITIONAL FIRE ALARM DEVICE REQUIREMENT (DETERMINED BY THE ENGINEER), INSTALLATION, CONNECTION AND ADDITIONAL WORK, WILL BE COVERED IN ACCORDANCE WITH THE "NET COST" PROVISION OF THIS CONTRACT. SEE SPECIFICATION FOR EXACT PROVISIONS.

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THE PORT AUTHORITY  
OF NY & NJ

Peter K. Shewey  
ENGINEERING PROGRAM MANAGER  
W.T.C.  
B. Feldstein  
CHIEF ELECTRICAL ENGINEER

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF ONE OF THE CONTRACT DRAWINGS CONSTITUTING A PART OF CONTRACT NO. IN THE FORM IN WHICH SAID DRAWINGS EXISTED AT THE TIME THE SAID CONTRACT WAS EXECUTED BY THE PARTIES.

DATE 7-15-97  
DATE 7/18/97  
SPEC. WRITER  
ENGINEER OF DESIGN

No. Date Revision Approved

Engineering Department  
Design Divisions

The World Trade  
Center

Title  
FIRE ALARM SYSTEM  
DEVICE UPGRADE  
PHASE III  
ELECTRICAL  
1 WTC  
INDEX OF DRAWINGS,  
LEGEND, ABBREVIATIONS AND  
GENERAL NOTES

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

S. FELDSTEIN B. FALDU  
Designed by Drawn by Checked by

Date 2/4/97 Scale NONE

Contract Number Drawing Number

WTC-861.077 E-1